RESPONSE

This is in response to the Office Action dated December 11, 2008. Claims 1 – 5, 9, 11 – 20, 23, 25 – 28 and 30 – 36 are pending in this Application. Claims 1 and 34 have been objected to. Claims 1 and 34 have been amended to correct grammatical errors. Claim 36 has been amended to make the claim more clear. Claims 6 – 8, 10, 21, 22, 24, 37 and 38 have been previously cancelled.

I. Response to Objections

The objection of Claims 1 and 34 for having informalities is respectfully traversed.

Claims 1 and 34 have been amended to correct grammatical errors. Accordingly, the Applicant respectfully requests that the objection of Claims 1 and 34 be withdrawn.

II. Response to Examiner's Rejection under 35 U.S.C. 101

The rejection of Claim 36 under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter is respectfully traversed.

The Examiner has taken the position that the Claim refers to an expression for which patent protection is sought. Expressions physically embodied or not does not constitute "any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof..." Therefore, expressions are not amenable to patent

protection under this statute.

The Applicant submits that the Examiner is correct with regard to an "expression" as typically used are not amenable to patent protection. However, the "Output Expression" claimed in Claim 36 is directed to a article formed by a particular process. Claim 36, as amended, provides:

> An Output Expression comprising a representation of EAV trends for a particular Population having an eligibility criteria and formed from taking individual units from sets of date wherein each individual unit meets at least one defined criteria, said trends are expressed in Cohort time segments based on a Start Time wherein each individual unit meets all of the eligibility criteria to be included into the Population; and of NNT trends of a particular Population; said trends are expressed in Cohort time segments.

The Output Expression comprises a representation (a thing). The mere fact that a claimed invention involves inputting numbers, calculating numbers, outputting numbers and storing numbers, in and of itself, does not render it non-statutory subject matter, unless it does not produce a "useful, concrete and tangible result." Here, the Output Expression is indeed a tangible result. Further, the Output Expression comprises EAV trends and NNT trends of a particular Population. Further, the Output Expression is created by taking individual units from sets of data, thus the sets or data are transformed into a different state or thing (sets of data are being transformed into Output Expressions). Thus, the raw data which represents physical and tangible objects is being transformed to a specific set of data and into a particular visual depiction of such physical objects (individuals). The electronic transformation of the data into a visual depiction is sufficient (a claim is not required to

involve any transformation of the underlying physical object that the data represents).

In view of the foregoing, the rejection of Claim 36, as amended, under 35 U.S.C. 101 should be withdrawn.

III. Summary of Applicant's Response to Claim Rejections

The Examiner takes the position that with respect to reference Wong (U.S. Patent No. 5,976,082) that while some aspects of the defined time window are determined "arbitrarily" as in "B" can be selected somewhere in between, other aspects of the time window determination and inclusion in a cohort are based on specified criteria. Specifically, the time point A "is defined based on the data extraction protocol... and C is defined by the last say for which the member is still enrolled and eligible for the benefits." Moreover, the Examiner takes the position that the definition of time point B in Wong is specifically amenable to "alternative definitions [that] may also be used." Such time windows and time frames are based on information in data files such as "Date of first CHF diagnosis... Date of first CHF hospitalization...Date of first diabetes event..." Further, the establishment of relevant time frames based on membership criteria for inclusion in a cohort as the basis of statistical analyses is old and well-known, especially in the medical arts and sciences where the progression of disease, effectiveness of drug regiments and so forth are studied. With respect to Wong, the process defined uses claims records of raw data and transforms it into a data base, such as the universe of congestive heart failure patients (step 116). A set of events relevant to congestive heart failure are defined and new files are then created

by reformatting the information into an event level format (step 120). Processing is then performed using a sliding time window and a plurality of variables which may be potential predictors. The time window limits the time periods in which the events from the data base are considered. The time window is used to identify an analysis region and a prediction region where activity in the analysis region is used to predict some predetermined outcome in the prediction region (step 122). Based on the time window a model is developed based on the data contained in the data base using statistical techniques (step 124). Having developed the model, it can then be applied to updated claims data (step 132) or to other databases of congestive heart failure patients, such as to identify at risk patients.

The Applicant takes the position that the process of Wong is significantly different from the process of the subject invention. The subject invention "model" is descriptive and empirical; it is not a statistical projection. The subject invention provides the opportunity to improve resource allocation for business in two related ways: 1) empirical identification of opportunities; and 2) empirical assessment of impact of targeting the opportunities identified. These are described below:

1. The value of the empirical outputs are to improve resource allocation by sub-dividing the output expression by the factors (e.g. categorical variables --CATVAR or dichotomous variables-DV) and assessing the extent to which they differ from a) the original output expression; and/or b) with the stratification of the two values of a dichotomous variables (DV). By examining for example, the magnitude of the difference between DV=1 vs. DV=0 one may make a decision to focus on the sub-

set of the population where DV=1, as it represents a good opportunity for success. In health care a DV could be, for example, adherence to a specific drug vs. non-adherence to a specific drug. This empirical evidence could then be used by a health care intervention team to select the sub-set of the target population that is non-adherent to this drug and implement an aggressive intervention. **Thus the empirical model can be used to identify opportunities within a population of UOA's for an intervention designed to improve resource allocation.**

2. The value of empirical outputs, when sub-divided by categorical variables and/or dichotomous variables, can also be used to assess the impact of the resource allocation decision. Again, the impact assessment is not based on predictive statistics as in Wong, but on a comparison of the output expression of the sub-set that experience the intervention compared to a group that did not experience the intervention. It could also be used in comparative effectiveness research where one intervention is compared against another, with the start time for both groups defined in the same fashion to achieve equivalence (e.g. by matching or randomization). **Thus the empirical model can be used to assess "Return on Resource Allocation" within a population of UOA's. This can be accomplished by comparing an intervention targeted by the results of the empirical "opportunity identification" model described above (by focusing on DV=1, for example); or by comparing two or more interventions against each other to assess the best allocation of resource empirically.**

IV. Response to Examiner's Rejections

The rejection of Claims 1 – 5, 9, 11 – 20, 23, 25 – 28 and 30 - 36 under 35 U.S.C. 103(a) as being unpatentable over McCartney in view of Wong is respectfully traversed.

McCartney discloses a method for determining resource consumption for a subject health care provider using resource consumption information from at least one other health care provider.

McCartney however does not include the specific and essential step of identifying a Start Time and forming at least one Cohort time segment based on that Start Time and then basing the entire data base structure on the unique use of calendar time to generate data based on cohort time with retrospective and prospective time segments pivoting around that start time. Thus, the process of the subject invention is nowhere taught or disclosed in McCartney.

As shown above, Wong also does not show forming at least one Cohort time segment based on the Start Time as defined in the subject application. While Wong provides that the Start Time is the first available date of enrollment and a time window is defined to provide a timeframe from which to judge whether events should be considered in subsequent processing, such a time window is not equivalent to a Cohort time segment.

As shown above, the process taught in Wong is profoundly different than the process

taught in the subject invention. The Applicant refers to FIGs. 6A and 6B, column 13 lines 61 -67and column 14, lines 1 - 34 of Wong. The Applicant submits that FIG. 6A shows that the process of Wong teaches using an events window to make a prediction window based on known data and using this to make a model that can be used to make predictions on new sets of data. This does not provide a teaching of a process of resource allocation. Further, point "B" operates as an Index Time ("Start Time"). As stated:

> "The definition of the present instant B is important. In the subject invention, two basic definitions of B were devised in order to maximize the accuracy of the prediction model. Although, as would be understood by those skilled I n the art, alternative definitions of B may also be used"

Thus, in Wong the "Index Time" or Start Time is not set or specifically defined by the criteria but is arbitrary assigned by the operator for making a prediction model. Points "A" and "C" (a point selected on how far out in time the prediction is to be made and calendar point "B" is arbitrary for use later in making predictions and uses statistical regression and progression models derived from data between point "A" and point "B" to predict what will happen between points "B" and "C" to create a prediction model. Point "B" of Wong is not set or defined as the time that an UOA-ID meets a set of predetermined conditions to be eligible for a defined population and therefore Wong does not apply Cohort time segments where each individual (UOA) can have a unique calendar time for point "B", and therefore point "A" to point "B" (retrospective time segment) and point "B" to point "C" (prospective time segments). Thus, Wong teaches selecting a population with a CHF diagnoses and beginning and an end calendar time period. Then Wong teaches the selection of a point between the beginning and the end that is arbitrary (e.g. six months before the end date)

and has nothing to do, for example, with the diagnoses. His mention of the :"date of first CHF diagnosis" is only part of a long list of the elements of a source data set; it can be used in his prediction model, but is not a central operating principle of his model to determine Point "B." Then within the time from the beginning to the arbitrary point between the beginning and the end, he seeks information important for statistical prediction of events between the beginning point and arbitrary mid-point; and the arbitrary mid-point and the end point where the calendar time segments are the same for each person.

The present invention teaches a central, **non-arbitrary**, starting point (similar to point B in Wong) based on criteria (or criterion) and using that as a central point where both prospective and retrospective time segments can be generated for each UOA in what is called "cohort time." Indeed, in the current invention, the point comparable for A and C in Wong is, in fact, arbitrary. Thus, what is arbitrary (point B) in Wong is non- arbitrary in Wilson, and what is non- arbitrary in Wong (points A and C) is arbitrary in the current invention

As described in the subject application, point "B" would be defined as the Start Time which is strictly defined as a date that the individual UOA-ID meets all of the eligibility criteria to be included into a population. Accordingly, the model of the subject application using Cohort Time and real data **not requiring the use of statistical regression and progression modeling,** instead it can clearly **use empirical data to examine the population trend both before and after the index calendar time start date of each person, now transformed into a common "cohort time" date for all persons in the**

population. Thus, the process of the subject application is different than that of the cited references and there is no teaching or motivation in the cited references that would teach the combining the two references along the subject application to arrive at the claimed invention.

Referring specifically to the Claims:

Independent Claim 1, as amended, provides:

> A method of improving resource allocation comprising the steps of:
> identifying at least one criterion;
> Identifying sets of information wherein each set of information includes a UOA-ID, a CCT, and a VAR Value;
> grouping each UOA-ID into an appropriate Type;
> identifying a Start Time wherein each UOA-ID has met said at least one criterion;
> forming at least one prospective or retrospective Cohort time segment for each UOA-ID based on their Start Time;
> placing the UOA-ID into the appropriate time segment;
> calculating an eligibility score for each UOA-ID for each time segment;
> calculating an Eligible Adjusted Variable Value; and
> generating at least one Output Expression.

McCartney discloses a method for determining resource consumption for a subject health care provider using resource consumption information from at least one other health care provider. McCartney however does not include the specific step of identifying a Start Time and forming at least one Cohort time segment based on that Start Time and then basing the entire data base structure on the unique use of calendar time to generate data based on cohort time with retrospective and prospective time segments pivoting around that Start Time. Thus, the process of the subject invention is nowhere taught or disclosed in

McCartney. The Examiner however takes the position that forming at least one Cohort time segment based on the Start Time is shown in Wong and one skilled in the art would be motivated to modify and change the process of McCartney by incorporating the step of forming at least one Cohort time segment based on the Start Time determined by McCartney. However, the Examiner has not provided any showing in the cited art that would provide such motivation or teaching. Further, the Examiner takes the position that Wong provides that the Start Time is the first available date of enrollment and a time window is defined to provide a timeframe from which to judge whether events should be considered in subsequent processing. Accordingly, it appears that the Examiner believes that the "time window" is equivalent to a Cohort time segment.

In contrast, the Applicant submits that the process taught in Wong is profoundly different than the process taught in the subject invention. The Applicant refers to FIGs. 6A and 6B, column 13 lines 61 -67and column 14, lines 1 - 34 of Wong. The Applicant submits that FIG. 6A shows that the process of Wong teaches using an events window to make a prediction window. This does not provide a teaching of a process of resource allocation. Further, point "B" operates as an Index Time ("Start Time"). As stated:

> "The definition of the present instant B is important. In the subject invention, two basic definitions of B were devised in order to maximize the accuracy of the prediction model. Although, as would be understood by those skilled I n the art, alternative definitions of B may also be used"

Thus, in Wong the "Index Time" or Start Time is not set or specifically defined by the

criteria but is arbitrary assigned by the operator. Points "A" and "C" (a point selected on how far out in time the prediction is to be made and calendar point "B" is arbitrary. Further, Wong uses statistical regression and progression models derived from data between point "A" and point "B" to predict what will happen between points "B" and "C." Point "B" of Wong does not set or define a start time as the time that an UOA-ID meets a set of predetermined conditions to be eligible for a defined population and therefore Wong does not apply Cohort time segments where each individual (UOA) can have a unique calendar time for point "B", and therefore point "A" to point "B" (retrospective time segment) and point "B" to point "C" (prospective time segments). Thus, Wong teaches selecting a population with a CHF diagnoses and beginning and an end calendar time period. Then Wong teaches the selection of a point between the beginning and the end that is arbitrary (e.g. six months before the end date) and this has nothing to do for example with the diagnoses. Then within the time from the beginning to the arbitrary point between the beginning and the end, Wong seeks information important for statistical prediction of events between the beginning point and arbitrary mid-point; and the arbitrary mid-point and the end point where the calendar time segments are the same for each person. The present invention teaches a central starting point based on criteria (or criterion) and using that as a central point where both prospective and retrospective time segments can be generated for each UOA in what is called "cohort time."

Independent Claim 16 provides:

> A method for improving resource allocation using a plurality of sets of information, the method comprising the steps of:
> for each set of information, identifying an UOA-ID, a Type, a CCT and a VAR Value;

grouping each UOA-ID into an appropriate Grouper;
identifying a Start Time wherein said Start Time is the earliest CCT for each specific UOA-ID per Type;
identifying a time segment duration;
forming time segments based on the Start Time wherein each UOA-ID meet a certain eligibility criteria;
adjusting and standardizing each VAR Value to create AdjVAR Values;
placing each AdjVAR Value into the appropriate time segment;
calculating an eligibility score for each UOA-ID; and
generating Output Expressions.

Again, Wong does not set or define a Start Time as the time that each UOA-ID meets a certain set of predetermined eligibility criteria.

Independent Claim 31 provides:

A method of analyzing the effects of similar trademarks comprising the steps of:
identifying at least one set of information each set comprising a UOA, and a UOA-ID, a Type, a CCT, and a VAR Value;
grouping each UOA-ID into an appropriate Type;
identifying a Start Time wherein each UOA-ID meets all of the eligibility criteria to be included into a Population;
forming Time segments based on the Start Time;
adjusting and standardize each VAR Value to create AdjVar Values;
sorting and placing each AdjVAR Value into the appropriate time segments;
calculating an Eligibility Score for each UOA-ID;
generating an Output Expression; and
analyzing the Output Expression to evaluate trademark perception.

Again, Wong does not set or define a start time as the time that an UOA-ID meets a set of predetermined conditions to be eligible for a defined population. Further, neither McCartney nor Wong teaches a method for analyzing the effects of similar trademarks or providing an Output Expression that can be used to evaluate trademark perception. Thus, McCartney in view of Wong does not teach or suggest the method of Claim 31.

Independent Claim 32 provides:

A method of analyzing and evaluating resource allocation for the health care industry comprising the steps of:
identifying a set of information, each set comprising a UOA, a UOA-ID, a Type, a CCT, and a VAR Value;
grouping each UOA-ID into an appropriate Grouper;
organizing each UOA-ID within each Grouper by succeeding CCT;
identifying a Start Time wherein each UOA-ID meets all of the eligibility criteria to be included into a Population;
forming time segments based on the Start Time;
adjusting and standardize each VAR Value to create AdjVAR Values;
sorting and placing each AdjVAR Value into the appropriate time segments;
calculating an Eligibility Score for each UOA-ID;
calculating an EAV for each time segment;
generating an Output Expression showing trends in health care for use in evaluating resource allocation.

Independent Claim 33 provides:

A method of allocating resources for use in marketing comprising the steps of:
identifying a set of information, each set comprising a UOA, a UOA-ID, a Type, a CCT, and a VAR Value;
grouping each UOA-ID into an appropriate Grouper;
organizing each UOA-ID within each Grouper by succeeding CCT;
identifying a Start Time wherein each UOA-ID meets all of the eligibility criteria to be included into a Population;
forming time segments based on the Start Time;
adjusting and standardize each VAR Value to create AdjVAR Values;
sorting and placing each AdjVAR Value into the appropriate time segments;
calculating an Eligibility Score for each UOA-ID;
calculating an EAV for each time segment;
generating an Output Expression showing trends for use in evaluating resource allocation for marketing.

Independent Claim 34, as amended, provides:

A system for use by a user in analyzing resource allocation comprising:
a central processing unit for operating software effective for performing the method of:
identifying at least one criterion for a Population;
identifying sets of information wherein each set of information includes a UOA-ID, a CCT, and a VAR Value;
grouping each UOA-ID into an appropriate Type;

identifying a Start Time wherein each UOA-ID meets all of the eligibility criteria to be included into the Population;
forming at least one Cohort Time segment based on the Start Time;
placing the VAR Value into the appropriate time segment;
calculating an eligibility score for each UOA-ID for each time segment;
calculating an Eligible Adjusted Variable Value; and
generating an Output Expression.

As described in the subject application and referring to Wong, point "B" would be defined as the Start Time which is strictly defined as a date that the individual UOA-ID meets all of the eligibility criteria to be included into a population. Accordingly, unlike Wong, the model of the subject application using Cohort Time and real data not requiring the use of statistical regression and progression modeling, instead it can clearly use empirical data to examine the population trend both before and after the index calendar time start date of each person, now transformed into a common "cohort time" date for all persons in the population. Thus, the process of the subject application is different than that of the cited references and there is no teaching or motivation in the cited references that would teach the combining the two references along the subject application to arrive at the claimed invention.

Independent Claim 36, as amended, provides:

> An Output Expression comprising a representation of EAV trends for a particular Population having an eligibility criteria and formed from taking individual units from sets of date wherein each individual unit meets at least one defined criteria, said trends are expressed in Cohort time segments based on a Start Time wherein each individual unit meets all of the eligibility criteria to be included into the Population; and of NNT trends of a particular Population; said trends are expressed in Cohort time segments.

The Applicant submits that as argued above, nether McCartney nor Wong teach an Output Expression comprising EAV trends or NNT trends of a particular population where such trends are expressed in Cohort time segments based on a Start Time wherein each individual unit meets all of the eligibility criteria to be included into the Population.

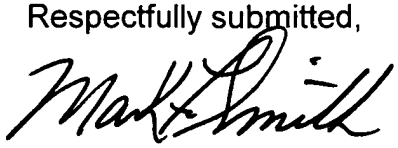
In view of the foregoing, the rejection of dependent Claims 1 – 5, 9, 11 – 20, 23, 25 – 28 and 30 - 36 under 35 U.S.C. 103(a) as being unpatentable over McCartney in view of Wong should be withdrawn.

V. Summary

The Applicant respectfully submits that he has developed a new and novel method of improving resource allocation by management. The mere fact that one may select the particular elements or modify such elements disclosed in the prior art to arrive at the claimed invention does not support a claim for obviousness unless there is some motivation to modify the references. Such a motivation cannot be found in the Applicant's own specification, but must be shown by evidence that *is clear and particular.*

In view of the foregoing remarks, it is respectfully submitted that all of the Claims now pending are now allowable over the art of record. Reconsideration of all claims now in this application is respectfully requested.

Respectfully submitted,



March 25, 2009

Mark F. Smith
Attorney of Record
(Reg. No. 32,437)

Smith Brandenburg Ltd.
905 Ohio Pike
Cincinnati, Ohio 45245
(513) 379-5846 (Phone)
(513) 752-5350 (Fax)
marks@sbtechnologylaw.com (Email)